

Serial No. 10/695,453
Docket No. T36-159874M/RS
(NGB.322)

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AMENDMENTS TO THE CLAIMS:

1. (Currently amended) An electrode for a p-type Group III nitride compound semiconductor layer, comprising:

a film including a polycrystalline metal disposed on said Group III nitride compound semiconductor layer,

wherein said polycrystalline metal comprises a transition metal.
2. (Previously presented) An electrode for a p-type Group III nitride compound semiconductor layer according to claim 1,

wherein said polycrystalline metal comprises a fiber structure in which crystal planes of crystal grains are oriented.
3. (Previously presented) An electrode for a p-type Group III nitride compound semiconductor layer according to claim 1, wherein said polycrystalline metal comprises large crystal grains.
- 4-6. (Canceled).
7. (Previously presented) The electrode according to claim 1, wherein the polycrystalline metal comprises a fiber structure in which a crystal grain boundary density decreases such that a quantity of defects in the metal/semiconductor boundary decreases.

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8. (Previously presented) The electrode according to claim 2, wherein a percentage of oriented crystal grains occupying said fiber structure is increased to provide an increase of an orientation force of the metal film.

9. (Previously presented) The electrode according to claim 2, wherein said fiber structure comprises a predetermined percentage of oriented crystal grains to provide a predetermined orientation force of the metal film.

10. (Previously presented) The electrode according to claim 1, wherein the polycrystalline metal comprises a fiber structure including oriented crystal faces including closed packed planes.

11. (Previously presented) An electrode for a p-type Group III nitride compound semiconductor layer, the electrode comprising:

a polycrystalline metal film disposed on said p-type Group III nitride compound semiconductor layer to form a metal/semiconductor boundary,

wherein said polycrystalline metal film comprises a fiber structure in which a crystal grain boundary density decreases such that a quantity of defects in the metal/semiconductor boundary decreases, and

wherein said polycrystalline metal film comprises a transition metal.

12. (Previously presented) The electrode according to claim 11, wherein said fiber structure of said polycrystalline metal film comprises oriented crystal planes of crystal grains.

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13. (Previously presented) The electrode according to claim 11, wherein said polycrystalline metal comprises crystal grains of a predetermined large size.

14. (Previously presented) The electrode according to claim 12, wherein a percentage of oriented crystal grains occupying said fiber structure is increased to provide an increase of an orientation force of the metal film.

15. (Previously presented) The electrode according to claim 11, wherein the polycrystalline metal comprises a fiber structure including oriented crystal faces including closed packed planes.

16. (Previously presented) The electrode according to claim 11, wherein said p-type Group III nitride compound semiconductor layer comprises one of GaN, AlGa_{0.5}N, and GaInN.

17. (Previously presented) The electrode according to claim 11, wherein said polycrystalline metal comprises one of platinum (Pt), nickel (Ni), palladium (Pd), chromium (Cr), and iron (Fe).

18. (Previously presented) The electrode according to claim 11, wherein a degree of said crystal grains of said predetermined large size is no less than a thickness of said polycrystalline metal film.

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19. (Previously presented) A p-type Group III nitride compound semiconductor light-emitting device, comprising:

an electrode including a polycrystalline metal film disposed on a p-type Group III nitride compound semiconductor layer of said light-emitting device to form a metal/semiconductor boundary,

wherein said polycrystalline metal film comprises a fiber structure in which a crystal grain boundary density decreases such that a quantity of defects in the metal/semiconductor boundary decreases, and

wherein said polycrystalline metal film comprises a transition metal.

20. (Previously presented) The device according to claim 19, wherein said fiber structure of said polycrystalline metal film comprises oriented crystal planes of crystal grains.

21. (Previously presented) The device according to claim 19, wherein said polycrystalline metal comprises crystal grains of a predetermined large size.

22. (Previously presented) The electrode according to claim 1, wherein said polycrystalline metal comprises one of platinum (Pt), nickel (Ni), palladium (Pd), chromium (Cr), and iron (Fe).

23. (Previously presented) The p-type Group III nitride compound semiconductor light-emitting device according to claim 19, wherein said polycrystalline metal comprises one of platinum (Pt), nickel (Ni), palladium (Pd), chromium (Cr), and iron (Fe).

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24. (New) The electrode according to claim 1, wherein said film is disposed directly on said p-type Group III nitride compound semiconductor layer.